

**TRANSGENIC ANIMAL ASSAY SYSTEM FOR**  
**ANTI-CHOLINESTERASE SUBSTANCES**

**ABSTRACT OF THE DISCLOSURE**

5           The present invention relates to novel  
alternative forms of human acetylcholinesterase (AChE) and  
nucleotide sequences encoding the same. The genes encoding  
the novel forms of human AChE have been identified in  
various malignant tumor cells. In a further aspect, the  
10 invention relates to a transgenic animal assay system for  
evaluating efficacy of drugs against cholinergic proteins,  
prior to or in the course of therapeutic treatment.  
Transgenic animals, preferably developing tadpole of  
*Xenopus* or mice which express human AChE, are used. The  
15 transgenic animal assay system is also useful for  
evaluating the toxicity of substances which potentially  
block human AChE (e.g. organophosphorous compounds).